



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,697	02/25/2004	Mathew T. Abraham	010886.00633	3661

22908 7590 11/30/2006

BANNER & WITCOFF, LTD.
TEN SOUTH WACKER DRIVE
SUITE 3000
CHICAGO, IL 60606

EXAMINER

SELLERS, DANIEL R

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,697

Applicant(s)

ABRAHAM, MATHEW T.

Examiner

Daniel R. Sellers

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25, 27 and 28 is/are allowed.
- 6) ☒ Claim(s) 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 10-13, filed 9/14/06, with respect to claims 1-25 have been fully considered and are persuasive. The rejections of claims 1-25 have been withdrawn.
2. Applicant's arguments with respect to claim 26 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. Claims 1-25 and 27-28 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, Miller teaches a communication link between two automatic equalizers to provide arbitration and/or synchronization of testing frequency generation and response analysis (Col. 7, lines 42-57 and Fig. 5, units 20a, 20b, and 72). Miller does not expand upon the meaning of arbitrating a response analysis or synchronizing a response analysis, therefore the prior art fails to show or suggest a communications pathway between a first channel element and a second channel element, wherein one of the channel elements informs another channel element about detecting acoustic feedback by providing determined filter parameters, wherein the determined filter parameters characterize the acoustic feedback.

Claims 2-11, 27, and 28 are allowable because they depend on claim 1.

Regarding claim 12, see the preceding reasons of allowability with respect to claim 1. Claim 12 uses similar language as claim 1, and it is allowable because the prior art fails to show or suggest the step of sending a first set of filter parameters, which corresponds to a first channel element associated with a first acoustic channel, to a second channel element associated with a second acoustic channel, wherein the first set of filter parameters characterize the acoustic feedback.

Claims 13-25 are allowable because they depend on claim 12.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lewis et al. (USPN 5245665) and Thurmond (USPN 4088834) (hereinafter Lewis and Thurmond respectively).

7. Regarding claim 26, Lewis teaches a first adaptive notch filter that processes a first acoustic signal from a performance microphone and detects a first acoustic feedback component that corresponds to a first feedback path between the performance microphone and at least one speaker, the performance microphone and an acoustic source of the performance microphone being on a same performance stage (Col. 1, lines 16-22; and Col. 3, lines 5-18). Lewis, also, teaches a second adaptive notch filter that processes a second acoustic signal and that detects a second acoustic feedback component that corresponds to a second feedback path between the

Art Unit: 2615

performance microphone and the at least one speaker (Col. 1, line 67 - Col. 2, line 14; and Col. 13, line 54 - Col. 14, line 5). Lastly, Lewis teaches a process, wherein one of the adaptive notch filters continues to detect an associated acoustic feedback component while a second of the adaptive notch filters updates a filter configuration of a corresponding operative notch filter (Col. 13, line 64 - Col. 14, line 18; and Col. 15, lines 16-41). However, Lewis does not teach adaptive processing, wherein the first adaptive processing is performed by the first adaptive notch filter in parallel with the second adaptive processing performed by the second adaptive notch filter. Thurmond teaches an active notch filter assembly, wherein the notch filters are connected in parallel (Col. 3, lines 1-14). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Lewis and Thurmond for the purpose of preserving high fidelity. Thurmond teaches a parallel connection of notch filters produces a system with no cumulative phase error, which inherently preserves the fidelity of an audio signal that has little to no phase error.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRS



SINH TRAN
SUPERVISORY PATENT EXAMINER